

What is claimed is:

1. A system for cooling a gas turbine, comprising:

an air bypass duct;

at least one cooling air chamber for supplying cooling air to a casing of the gas turbine;

at least one cooling air tube having an inlet positioned in the air bypass duct and an outlet connected to the cooling air chamber to supply cooling air from the air bypass duct to the cooling air chamber; and

an air deflector positioned in the air bypass duct upstream of the cooling air tube inlet, the air deflector being movable to deflect air from the cooling air tube inlet.

2. The system of claim 1, wherein:

the air deflector is movable between an open position in which the cooling air tube inlet is substantially fully exposed to air flow in the air bypass duct and a closed position in which the cooling air tube inlet is substantially isolated from air flow in the air bypass duct.

3. The system of claim 2, wherein:

the air deflector comprises a flap having an upstream end, the flap upstream end being pivotally mountable to the gas turbine.

4. The system of claim 3, wherein:

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the air deflector extends substantially in a direction of the air flow in the bypass duct.

5. The system of claim 4, wherein:

an inner wall of the air bypass duct is recessed to at least partially contain the air deflector when the air deflector is in the closed position.

6. The system of claim 5, wherein:

the air deflector makes an acute angle with the inner wall of the air bypass duct when in the closed position.

7. The system of claim 6, and further comprising:

a deflector actuating unit; and

an actuating rod connecting the deflector actuating unit to the deflector.

8. The system of claim 7, wherein:

the deflector actuating unit comprises a positioning motor.

9. The system of claim 1, wherein:

the air deflector comprises a flap having an upstream end, the flap upstream end being pivotally mountable to the gas turbine.

10. The system of claim 1, wherein:

the air deflector extends substantially in a direction of air flow in the bypass duct.

11. The system of claim 1, wherein:

an inner wall of the air bypass duct is recessed to at least partially contain the air deflector when the air deflector is in a closed position.

12. The system of claim 1, and further comprising:

a deflector actuating unit; and

an actuating rod connecting the deflector actuating unit to the deflector.

13. The system of claim 2, wherein:

the air deflector makes an acute angle with an inner wall of the air bypass duct when in the closed position.

14. A gas turbine, comprising:

a combustion chamber;

a casing;

a high pressure turbine positioned within the casing;

a low pressure turbine positioned within the casing downstream of the high pressure turbine;

an air bypass duct;

at least one cooling air chamber for supplying cooling air to the casing of the gas turbine;

at least one cooling air tube having an inlet positioned in the air bypass duct and an outlet connected to the cooling air chamber to supply cooling air from the air bypass duct to the cooling air chamber; and

an air deflector positioned in the air bypass duct upstream of the cooling air tube inlet, the air deflector being movable from a first position and a second position, the first position exposing a portion of the cooling air tube inlet to air flow in the air bypass duct, the second position isolating that portion of the air tube inlet from the air flow in the air bypass duct.

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